



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/077,779	02/20/2002	Takahiro Sasakura	501.41215X00	6340

20457 7590 09/04/2003

ANTONELLI, TERRY, STOUT & KRAUS, LLP
1300 NORTH SEVENTEENTH STREET
SUITE 1800
ARLINGTON, VA 22209-9889

EXAMINER

NGUYEN, DILINH P

ART UNIT	PAPER NUMBER
----------	--------------

2814

DATE MAILED: 09/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/077,779

Applicant(s)

SASAKURA ET AL.

Examiner

DiLinh Nguyen

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claim 3 is rejected under 35 U.S.C. 102(e) as being anticipated by Jeon et al. (U.S. Pat. 6432750).

Jeon et al. disclose a semiconductor package (fig. 1) comprising:

a package 7 sealing a semiconductor integrated circuit 5, and having structural components 9 of a power supply module that supplies power to the package (column 1, lines 32-33 and 55).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masanobu (J.P. 8279593) in view of Chen et al. (U.S. Pat. 6394175).

- Regarding claims 1 and 3, Masanobu discloses a semiconductor device (fig. 2, abstract) comprising:

Art Unit: 2814

a package 100 sealing a semiconductor integrated circuit 2; and
an electronic component 20 mounted on the package.

Masanobu fails to disclose the electronic component is a power supply module.

Chen et al. disclose a semiconductor device (fig. 1) comprising:

an electronic component 110 may be an electronic module, such as a power supply module (column 4, lines 18-20); and

the power supply module 110 comprises a power supply chip unit or a power supply chip unit and peripheral components thereof (column 4, lines 15-20).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Masanobu to supply power to the semiconductor package and to reduce the size of the package, as shown by Chen et al.

- Regarding claim 2, Masanobu discloses a plurality of electrodes 22; the package 100 is provided with electrodes 4 on the surface thereof; and the electronic component is mounted on the package and electrodes 4 is connecting to the electrodes 22 of the electronic component.
- Regarding claim 4, Masanobu discloses an interface between the semiconductor integrated circuit 2 sealed by the package 100 and the electronic component 110; and bi-directional control function between the IC and the electronic component.
- Regarding claim 5, Masanobu discloses the electronic component is removable from the package.

Art Unit: 2814

- Regarding claim 8, it would have been obvious that the output voltage of the power supply module is lower than the input voltage of the package.

5. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masanobu (J.P. 8279593) in view of Chen et al. (U.S. Pat. 6394175) and further in view of Lin (U.S. Pat. 6184580).

Masanobu and Chen et al. fail to disclose the semiconductor integrated circuit module has a structure that enables it self to install a heat sink and the power supply module has an opening and the heat sink can be installed via the opening.

Lin discloses a semiconductor device (fig. 3, column 3, lines 58 et seq.) comprising:

a semiconductor integrated circuit module 20 has a structure that enables itself to install a heat sink 42 after an element 35 has mounted. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Masanobu and Chen et al. to increase a heat dissipation capability of the semiconductor package, as shown by Lin.

- Regarding claim 7, Lin discloses the element 35 has an opening and the heat sink can be installed via the opening.

Conclusion

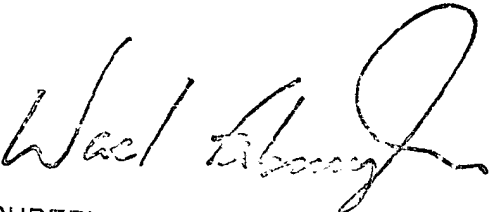
Any inquiry concerning this communication or earlier communications from the examiner should be directed to DiLinh Nguyen whose telephone number is (703) 305-6983. The examiner can normally be reached on 8:00AM - 6:00PM (M-F).

Art Unit: 2814

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (703) 308-4918. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

DLN
August 14, 2003


SUPERVISORY PRIMARY EXAMINER
TECHNOLOGY CENTER 2800